**Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ TP: \_\_\_\_\_\_\_\_**

CW#78H: Intro to Tangent  
Honors Geometry

Honors Geometry

**The Basics!**  
In the space below, follow the steps for Construction #1:

1. Construct a circle. Label the center O (capital O).
2. Draw a line that intersects a circle at exactly one point. Label this point X.
3. Tangent: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

**Going Off on a Tangent!**  
In the space below, follow the steps for Construction #2:

1. Construct a circle. Label the center O (capital O).
2. Using your straightedge, draw a line that appears to touch the circle at only one point. Label the point T. Construct OT.
3. Use your protractor to measure the angles at T. What can you conclude about the radius OT and the tangent line at T?

**Tangent Segments!**  
In the space below, follow the steps for Construction #3:

1. Construct a circle. Label the center E.
2. Choose a point outside the circle and label it N.
3. Draw two lines through point N tangent to the circle. Mark the points where these lines appear to touch the circle and label them A and G.
4. Use your compass to compare segments NA and NG. Segments such as these are called **tangent segments**.
5. **Tangent segments** to a circle from a point outside the circle are \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ .

**Questions (slash review):**

1. What is the measure of ? \_\_\_\_\_\_\_
2. Draw a segment AE and GE. What is the measure of ? \_\_\_\_\_\_\_
3. What is the measure of ? \_\_\_\_\_\_\_ How do you know?
4. What is the measure of ? \_\_\_\_\_\_\_ How do you know?
5. What conclusion can you make about the interior sum of the angles in ANGE? Does this make sense?
6. We call  the central angle. This determines the **minor arc** AG.  is said to intercept AG because the arc is within the angle. The measure of the **minor arc** is defined as the measure of its central angle, so   
   mAG = = \_\_\_\_\_\_\_\_ .
7. Draw a point anywhere on the circle. What do you think the measure **major arc**, mGXA is equal to? How do you know?